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COMMENTS FOR TELEPHONE INTERVIEW DISCUSSION

Claims for Discussion:

44. (Previously presented): A bioreactor comprising:
- i. a first substrate having a first surface and an opposite second surface, defining a chamber therebetween the first surface and the opposite second surface of the first substrate for receiving biological cells and a liquid medium;
 - ii. an inlet port formed in the first substrate and apart from the chamber;
 - iii. a first connection channel formed in the first substrate, wherein the first connection channel is in fluid communication with the inlet port and the chamber for allowing a stream of substance to be delivered to the chamber;
 - iv. an outlet port formed in the first substrate and apart from the chamber;
 - v. a second connection channel formed in the first substrate, wherein the second connection channel is in fluid communication with the outlet port and the chamber for allowing a stream of substance to be removed from the chamber; and
 - vi. confining means positioned in the chamber to form a confinement region to confine the biological cells therein with the liquid medium,
- wherein the chamber, the inlet portion the first connection channel, the outlet port, and the second connection channel are all formed in the first substrate;
- wherein the confining means comprises a first filter and a second filter, wherein the first filter is positioned proximate to the first connection channel and the second filter is positioned proximate to the second connection channel, and the first filter and the second filter are substantially parallel to each other; and
- wherein each of the first filter and the second filter comprises a plurality of posts spaced apart from each other not to allow biological cells to pass through it.



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45. (Currently amended): A bioreactor comprising:
- i. a first substrate having a first surface and an opposite second surface, defining a chamber therebetween the first surface and the opposite second surface of the first substrate for receiving biological cells and a liquid medium;
 - ii. an inlet port formed in the first substrate and apart from the chamber;
 - iii. a first connection channel formed in the first substrate, wherein the first connection channel is in fluid communication with the inlet port and the chamber for allowing a stream of substance to be delivered to the chamber;
 - iv. an outlet port formed in the first substrate and apart from the chamber;
 - v. a second connection channel formed in the first substrate, wherein the second connection channel is in fluid communication with the outlet port and the chamber for allowing a stream of substance to be removed from the chamber; and
 - vi. confining means positioned in the chamber to form a confinement region to confine the biological cells therein with the liquid medium,
- wherein the chamber, the inlet portion, the first connection channel, the outlet port, and the second connection channel are all formed in the first substrate such that, in operation, the stream of substance flows from the inlet port through the first connection channel, the chamber and the second connection channel to the outlet port in a direction that is substantially parallel to the plane of the first surface of the first substrate; and wherein the first substrate further defines a first alternate port and a third connection channel in fluid communication with the first alternate port and the confined region of the chamber for allowing seed biological cells to perfuse only inside the confined region in the chamber.
46. (Previously presented): The bioreactor of claim 44, wherein the first substrate is fabricated from glass, Mylar, PDMS, silicon, a polymer, a semiconductor, or any combination of them.
47. (Previously presented): The bioreactor of claim 44, further comprising a second substrate having a first surface and an opposite, second surface, wherein the second substrate is sized such that when the first surface of the second substrate is received by the second surface of the first substrate, the chamber is covered.



48. (Original): The bioreactor of claim 47, further comprising at least one supporting member positioned outside the confined region of the chamber for supporting the second substrate.
49. (Original): The bioreactor of claim 47, further comprising at least one supporting member positioned inside the confined region of the chamber for supporting the second substrate.
58. (Previously presented): The bioreactor of claim 45, wherein the first substrate is fabricated from glass, Mylar, PDMS, silicon, a polymer, a semiconductor, or any combination of them.
59. (Previously presented): The bioreactor of claim 45, further comprising a second substrate having a first surface and an opposite, second surface, wherein the second substrate is sized such that when the first surface of the second substrate is received by the second surface of the first substrate, the chamber is covered.
60. (Previously presented): The bioreactor of claim 59, further comprising at least one supporting member positioned outside the confined region of the chamber for supporting the second substrate.
61. (Previously presented): The bioreactor of claim 59, further comprising at least one supporting member positioned inside the confined region of the chamber for supporting the second substrate.
62. (Previously presented): The bioreactor of claim 45, wherein the stream of substance is controlled so as to provide a gradient to the channel.
63. (Previously presented): The bioreactor of claim 45, wherein the stream of substance comprises chemokine.